

Period:

Date:

Name:

# Spectral Analysis 1

Ex

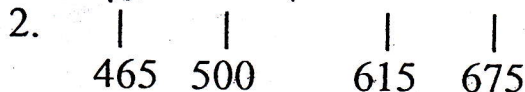
Absorption



Ca, moving away, cool gas under low pressure (star?)

$$V = \frac{(3 \times 10^5 \text{ km/s})(6 \text{ nm})}{(430 \text{ nm})} = \boxed{4.19 \times 10^3 \text{ km/s}}$$

Emission



Directions:

Answer these four questions for each spectrum:

1. What is the element?
2. Which way is it moving?
3. What are the physical conditions? (What is producing the spectrum?)
4. How fast is the source moving?  
in km/s

Use the Doppler Shift formula

\* Use  
low Z  
value from  
spectrum

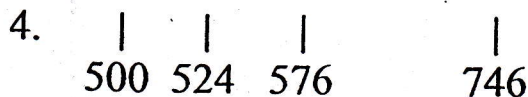
$$V = c \frac{\Delta \lambda}{\lambda} \quad \text{or} \quad V = \frac{c \Delta \lambda}{\lambda}$$

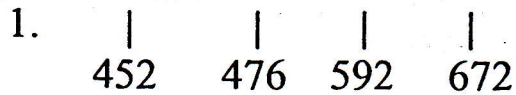
\*  $\Delta$  = change

Be sure to show your setup and include all units (labels)



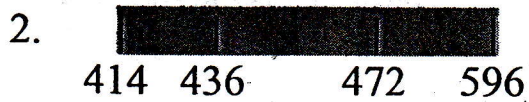
$$c = 3 \times 10^8 \text{ m/s} \quad \text{or} \quad 3 \times 10^5 \text{ km/s}$$





Answer these four questions for each spectrum:

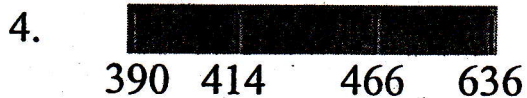
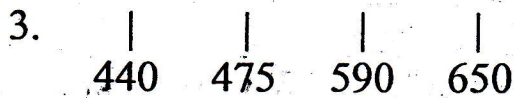
1. What is the element?
2. Which way is it moving?
3. What are the physical conditions?
4. How fast is the source moving?



Use the Doppler Shift formula

$$V = c \times \frac{\Delta \lambda}{\lambda}$$

Be sure to show your setup and include all units (labels)



Period:

Date:

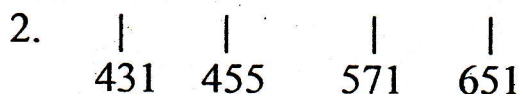
Name:

## Spectral Analysis 2

### Directions:

Answer these four questions for each spectrum:

1. What is the element?
2. Which way is it moving?
3. What are the physical conditions?
4. How fast is the source moving?



Use the Doppler Shift formula

$$V = c \times \frac{\Delta\lambda}{\lambda}$$

Be sure to show your setup and include all units (labels)

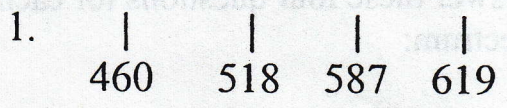




Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

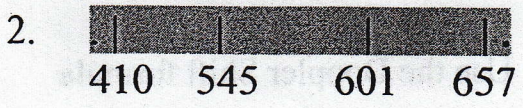
# Spectral Analysis

Directions: Answer these four questions for each spectrum.



Answer these four questions for each spectrum:

1. What is the element?
2. Which way is it moving?
3. What are the physical conditions?
4. How fast is the source moving?



Use the Doppler Shift formula

$$V = c \frac{\Delta \lambda}{\lambda}$$

Be sure to show your setup and include all units (labels)

